

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) Proximity detector employing a capacitive sensor, comprising:

- at least one detection antenna comprising a plurality of capacitive proximity sensors, each comprising a measurement electrode, said antenna being placed close to an object or a body,

- electronic means for exciting said measurement electrodes and for processing the signals originating from said capacitive sensors,

- digital means for controlling the electronic means and for calculating, from the measurement signals thus processed, the distances between said electrodes and said object or said body,

characterised in that the electronic means comprise, for each detection antenna, a floating capacitive bridge or with floating excitation, cooperating with polling means to measure sequentially the respective capacitances between each electrode of said antenna and the object or body to be measured.

2. (currently amended) Proximity detector according to claim 1, characterised in that the detection antenna also

comprises a single at least one shield for all the measurement electrodes of the antenna.

3. (canceled)

4. (previously presented) Proximity detector according to Claim 1, characterised in that the electronic means and the digital control and calculation means cooperate to measure a distance successively on each electrode of an antenna according to a predetermined but changeable order.

5. (currently amended) ~~Proximity detector according to~~ ~~Claim 1, characterised in that~~ Proximity detector employing a capacitive sensor, comprising:

at least one detection antenna comprising a plurality of capacitive proximity sensors, each comprising a measurement electrode and a shield, said antenna being placed close to an object or a body;

electronic means for exciting said measurement electrodes and for processing the signals originating from said capacitive sensors;

digital means for controlling the electronic means and for calculating, from the measurement signals thus processed, the distances between said electrodes and said object or said body;

said electronic means comprising, for each detection antenna, a floating capacitive bridge or with floating excitation, cooperating with polling means to measure

sequentially the respective capacitances between each electrode of said antenna and the object or body to be measured,

wherein at least one of its the detection antennas comprises a test track which, in normal operation, is at the potential of the shield and, in test mode, is earthed.

6. (original) Proximity detector according to claim 5, characterised in that the test track is placed to the rear of or close to the electrodes.

7. (previously presented) Proximity detector according to Claim 1, characterised in that the electronic means and the digital control and calculation means cooperate to deliver an alarm signal indicating an inconsistent measurement or a malfunction of the digital control and calculation means.

8. (previously presented) Proximity detector according to Claim 1, characterised in that the electronic means also comprise one or more reference capacitances provided to check the calibration of said electronic means or to recalibrate said electronic means.

9. (previously presented) Proximity detector according to Claim 1, characterised in that one antenna also comprises, close to the measurement electrodes, one or more shield or earthing surfaces which are arranged to modify the field lines of the measurement electrodes.

10. (currently amended) Proximity detector according to Claim 1, ~~characterised in that it wherein the proximity detector~~

is arranged on the inside or outside surface of a cap or box and comprises a plurality of measurement areas equipped with detection antennas.

11. (previously presented) Proximity detector according to Claim 1, characterised in that the electronic means and the digital control and calculation means cooperate to deliver proximity detection threshold signals.

12. (previously presented) Proximity detector according to Claim 10, characterised in that the electronic means and the digital control and calculation means cooperate to deliver analogue output signals of minimum distance images between the zones of the box and the objects detected.

13. (previously presented) Proximity detector according to Claim 10, characterised in that the antennas are arranged on five faces of the box or cap.

14. (currently amended) Proximity detector according to Claim 10, ~~characterised in that it~~ wherein the proximity detector comprises edge antennas arranged in part over one face of said cap, and in part over another contiguous face, and lateral antennas.

15. (previously presented) Proximity detector according to Claim 1, characterised in that at least one of the antennas is produced using a flexible circuit.

16. (previously presented) Proximity detector according to Claim 1, characterised in that at least one of the antennas is connected to the electronic means by flexible connecting means.

17. (currently amended) Proximity detector according to Claim 1, used in a piece of radiology equipment employing X-rays, comprising a device for emitting an X-ray beam intended to irradiate an object or a body and a device for detecting the X-rays originating from said object or body, this X-ray detector device being covered by a cap, ~~characterised in that wherein~~ the proximity detector is arranged on the inside or outside surface of said cap, ~~in the X-ray emission field and in that it comprises at least one antenna, termed the X-ray antenna, crossed by the X-ray beam.~~

18. (canceled)

19. (currently amended) Proximity detector according to claim 17, ~~characterised in that the X-ray antenna is produced from wherein~~ said detection antenna comprises a flexible printed circuit composed of an insulator metallised on both faces with a thin layer of chromium then by a layer of copper, said copper layer being removed over an area which corresponds to ~~the a~~ passage of for the X-ray beam and in which [[the]] linking tracks and the capacitive electrodes proximity sensors are produced from the chromium layer.

20. (currently amended) Proximity detector according to Claim 1, fitted in a piece of radiology equipment employing X-

rays, comprising a device for emitting an X-ray beam intended to irradiate an object or a body, ~~characterised in that it wherein~~
the detector is arranged on the inside or outside surface of said emitter device.

21-30. (canceled)